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Substitute for form 1448A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 13

Complete if Known

Application Number
Filing Date November 6, 2003
First Named Inventor Lester F. Ludwig
Group An Unit
Examiner Name
Attorney Docket Number 2738-30

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
100	A1	US-1,947,030	02-13-1934	Ranger	
	A2	US-3,493,889	02-03-1973	Ebrecht et al	
	A3	US-3,591,529	07-06-1971	Cutler	
	A4	US-3,812,741	10-12-1977	Marshall	
	A5	US-3,851,242	03-21-1975	Evans	
	A6	US-3,739,048	05-01-1973	Spencer	
	A7	US-3,742,133	08-28-1973	Cohen	
	A8	US-3,805,091	04-16-1974	Coen	
	A9	US-3,813,473	05-28-1974	Terymanko	
	A10	US-3,878,748	04-22-1975	Spencer	
	A11	US-3,896,958	05-18-1976	Ebrhans et al	
	A12	US-3,882,645	05-15-1976	Creager et al	
	A13	US-4,070,021	02-28-1978	Heet	
	A14	US-4,080,887	03-28-1978	Palanangau	
	A15	US-4,117,413	09-26-1978	Moog	
	A16	US-4,122,742	10/31/1978	Deulach	
	A17	US-4,151,388	04-24-1979	Fricke et al	
	A18	US-4,182,212	01-08-1980	Indick	
	A19	US-4,274,321	05-23-1981	Swartz	
	A20	US-4,318,327	03-09-1982	Youse	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Country Code ⁴ - Number ⁵ - Kind Code ⁶ (if known)				
100	B1	EP-6 574 213-A1	12-15-1993	Synaplix, Inc.		

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Date Considered

7/23/07

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		Filing Date	November 6, 2003
		First Named Inventor	Lester F. Ludwig
		Group An Unit	
		Examiner Name	
Sheet 2 of 13	Attorney Docket Number	2738-30	

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number Number - Kind Code ¹ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Paragraphs or Relevant Figures Appear
[Signature]	A21	US-4,365,533	12-28-1982	Clark, Jr. et al	
	A22	US-4,781,899	11-01-1988	Koike	
	A23	US-4,794,538	01-03-1989	Comigeu, III	
	A24	US-4,797,808	01-10-1989	White	
	A25	US-4,832,444	08-01-1989	Hoover et al.	
	A26	US-4,981,488	02-13-1991	Felt et al.	
	A27	US-5,933,352	06-23-1991	Kellogg et al.	
	A28	US-5,045,887	08-03-1991	Gurner	
	A29	US-5,070,399	12-03-1991	Martel	
	A30	US-5,148,833	09-15-1992	Lui	
[Signature]	A31	US-5,159,140	10-27-1992	Kempers et al.	
	A32	US-5,219,189	08-08-1993	Grob-Da Velga	
	A33	US-5,233,123	08-03-1993	Price et al.	
	A34	US-5,262,886	11-16-1993	Greene et al.	
	A35	US-5,281,758	01-25-1994	Farnell et al.	
	A36	US-5,282,989	03-08-1994	Tumura	
	A37	US-5,357,048	10-18-1994	Sigol	
	A38	US-5,378,855	01-09-1995	Tumura	
	A39	US-5,442,072	08-08-1995	Wills	
	A40	US-5,442,168	08-15-1995	Gurner et al.	

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[Signature]	7/23/07

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³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Group A Unit	
Examiner Name	
Attorney Docket Number	2738-30

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Examiner Initials	Che No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Chief Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figure Appear
		Number - Kind Code ² (if known)			
<i>[initials]</i>	A41	US-5,459,282	10-17-1995	Wells	
	A42	US-5,471,008	11-28-1995	Fujita et al.	
	A43	US-5,476,214	12-12-1995	DeFranco et al.	
	A44	US-5,588,841	10-15-1996	Gruenbaum	
	A45	US-5,585,588	12-17-1996	Tumura	
	A46	US-5,658,145	08-19-1997	Wiel	
	A47	US-5,858,488	08-18-1997	Norris et al.	
	A48	US-5,888,927	08-08-1997	Taki et al.	
	A49	US-5,888,338	08-18-1997	Newitt et al.	
	A50	US-5,875,190	10-07-1997	Hewlett	
	A51	US-5,761,888	04-21-1998	Kushnits	
	A52	US-5,783,808	06-08-1998	Wells	
	A53	US-5,798,542	06-28-1998	Vossland	
	A54	US-5,827,888	10-27-1998	Pey et al.	
	A55	US-5,852,051	12-15-1998	Meachover et al.	
	A56	US-5,852,251	12-22-1998	Su et al.	
	A57	US-5,932,827	06-03-1999	Ostrome et al.	
	A58	US-5,969,293	10-19-1999	Lacey et al.	
<i>[initials]</i>	A59	US-6,047,073	04-04-2000	Norris et al.	
	A60	US-6,061,769	04-18-2000	Brown, Jr.	

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Kara Deval


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Application Number	
Filing Date	November 6, 2003
First Named Inventor	Lester F. Ludwig
Group Art Unit	
Examiner Name	
Attorney Docket Number	2738-30

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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	
		Filing Date	November 6, 2003
		First Named Inventor	Lester F. Ludwig
		Group Art Unit	
		Examiner Name	
Sheet 5 of 13	Attorney Docket Number	2738-30	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of this item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
No Date	C1	"Biax True Stereo Pictures," product description, Musicians' Friend catalog.	
	C2	"Korg's New Z-1 Helps Fiddler Keep His Funk", Music and Sound Retailer, Mar. 1998.	
No Date		"Synaptics Targets Vision, Sound processing."	
	C4	"Yamaha VL1", advertisement, Electronic Musician, Apr. 1994.	
	C5	APPELMAN, D. RALPH, The Science of Vocal Pedagogy, Theory and Applications, 1967, Indiana University Press, Bloomington, Indiana, USA.	
No Date		Bixie Reganberry, 602 15425, Stamford, CT, 06901-0425, USA.	
	C7	BICANIC, DANE, ed. Photoacoustic and Photothermal Phenomena III, 1982, vol. 69, Springer-Verlag, Berlin Heidelberg, Germany.	
	C8	BORMANS, JAN "MPEG-4 systems need specialized CPUs", Electronic Engineering Times, Jan. 25, 1999.	
	C9	Boss DF-2, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	
	C10	Boss OC-2 Service Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	
	C11	Boss SE-70 Super Effects Processor Algorithm Guide, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	

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¹ Unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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		Group Art Unit	
		Examiner Name	
Sheet 8 of 13	Attorney Docket Number	2735-30	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C12	Boss 65-70 Super Effects Processor Owners Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3898, USA.	
	C13	CP-40 Pro Performance Computer, Roland, 7200 Dominion Circle, Los Angeles, CA 90040-3898, USA.	
	C14	OMP-16 Digital Mixing Processor, Yamaha Corporation, PO Box 1, Hamamatsu, Japan.	
	C15	DP14, Ensoniq, 155 Great Valley Parkway, Malvern, PA 19355, USA.	
	C16	F-Box, Head-Boom Products, PO Box 3312, 611 Ducommun St., Los Angeles, CA 90061, USA.	
EP	C17	EPSTEIN, "The Search for New Chemical Oscillators," in Chemical Instabilities, Nicolle and Baras (eds.), 1984, D.Reidel Publishing, Dordrecht/Boaton/Lancaster.	
EP	C18	EPSTEIN, IRVING R, "New Chemical Oscillators", Non-Equilibrium in Chemical Systems, 1984, Springer-Verlag, Berlin/Heidelberg, Germany.	
	C19	Ernie Ball, Volume 1028, Musician's Friend-Galsien.	
EP	C20	Etc., PETER, Letter to Editor, Experimental Musical Instruments, Jun., 1996.	
	C21	EW13020, AKAI Corporation, 84X-2344 Fort Worth, TX 76113, USA.	
EP	C22	FIELD, RICHARD J., and NOYES, RICHARD M, "Oscillations in Chemical Systems IV Limit Cycle Behavior in a Model of a Real Chemical Reaction," J. Chem. Physics, Vol. 60, No. 5, Mar. 1974.	

Examiner Signature	<i>[Signature]</i>	Date Considered	7/23/07
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		Filing Date	November 8, 2003
		First Named Inventor	Lester F. Ludwig
		Group Art Unit	
		Examiner Name	
Sheet 7 of 13	Attorney Docket Number	2738-36	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Y ²
	C23	GI-10 Guitar MIDI-interface, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3686, USA.	
	C24	GRAY, PETER, and SCOTT, STEPHEN K, "Chemical Oscillations and Instabilities," 1990, Clarendon Press, Oxford, Great Britain.	
	C25	GSP 21 LEGEND, English, 8760 South Sandy Parkway, Sandy, UT 84070, USA.	
	C26	GZOWSKI, JOHN "Sins and Sympathetics", Experimental Musical Instruments, JUNE 1997, vol. 12, No. 4.	
	C27	HARA, YOSHIKO "Matsushita demos multilayer MPEG-4 compression", Electronic Engineering Times, Apr. 19, 1999.	
	C28	JOHNSON, COLIN "Computer program recognizes facial expressions", Electronic Engineering Times, Apr. 12, 1999.	
	C29	JOHNSON, COLIN "Image sensor tracks moving objects in hardware", Electronic Engineering Times, Apr. 5, 1999.	
	C30	Kaoss pad dynamic effect/controller, Korg Proview Users' magazine, Summer 1999.	
	C31	KING and WHITE, "Facile Sensing Array Based on Forming and Detecting an Optical Image," UC Berkeley Preprint.	
	C32	KURAMOTO, YOSHIKI, "Rhythms and Turbulence in Populations of Chemical Oscillators", Physica 105A (1981), pp. 128-143, North-Holland.	
	C33	LEIBERMAN, DAVID "Software goes on a search-and-locate mission", Electronic Engineering Times, Jan. 25, 1999, pp. 44.	

Examiner Signature	<i>[Signature]</i>	Date Considered	7/23/03
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Sheet	5	of	13

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>[Signature]</i>	C34	LEIBERMAN, DAVID "Touch screens extend grasp into consumer realm" Electronic Engineering Times, Feb. 8, 1998.	
	C35	Light Wave Pictures, Audio Optics, Santa Barbara, CA., USA.	
<i>[Signature]</i>	C36	LIM, AGRAWAL, and NEKLUDOVA "A Fast Algorithm for Labeling Connected Components in Image Arrays", Technical Report Series, No. NAB5-2, Thinking Machines Corp., 1986 (rev. 1987), Cambridge, Mass., USA.	
	C37	CORLETT'S TOUCH-TASTE Array-Sensor, Lord Corp., Ind. Aut. Div., 407 Gregson Dr., PO Box 8200, Cary, NC, 27511-8200, USA.	
<i>[Signature]</i>	C38	LUDWIG, L., "A Generalized Linear Amplitude Processor," Electronotes, Dec. 1978, vol. 11, No. 108.	
<i>[Signature]</i>	C39	LUDWIG, L., "A Square-Wave Frequency-Division Sub-Octave Cross-Product Module," Electronotes, Feb. 1979, Vol. 11, No. 98.	
<i>[Signature]</i>	C40	LUDWIG, L., "GLAP Revisited," Electronotes, Jul. 1981, vol. 13, No. 127.	
<i>[Signature]</i>	C41	LUSHER, E. (unk) "Photoacoustic effect: principles and applications: proceedings of the First International Conference on the Photoacoustics," 1984, Vieweg.	
	C42	MIDI Player MP-88-Midiemp, Max-Haube-Strasse 1 85715 Unterschleißheim, Germany 0049-89-3-10-81-38.	
<i>[Signature]</i>	C43	MOOG, ROBERT A. "The Human Finger-A Versatile Electronic Music Instrument Component", Audio Engineering Society Preprint, 1977, New York, NY, USA.	
	C44	MS4-M53, Solfon-Kennel 15b, 661, By Bell Druvox Corp. 126 Rt. 303, 10984 W. Nyack, NY, USA.	

Examiner Signature	<i>[Signature]</i>	Date Considered	7/23/07
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		Examiner Name	
Sheet 9 of 13	Attorney Docket Number	2735-30	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS); title of the article (when appropriate); title of the item (book, magazine, journal, serial, symposium, catalog, etc.); date, page(s), volume-issues number(s), publisher, city and/or country where published.	T ²
	C45	MURPHY, AAMODT, Spicer and Royce (eds) Photoacoustic and Photothermal Phenomena II, 1989, vol. 82, Springer-Verlag, Berlin Heidelberg, Germany.	
	C46	NAGY-UNGVARAI, Z. and HESS, BENNO "Control of Dynamic Pattern Formation in the Belousov-Zhabotinsky Reaction" Physica D (1991) North-Holland.	
	C47	NICOLIS, G and BARAS, F (eds.), Chemical Instabilities, 1984, D.Reidel Publishing, Dordrecht/Boston/Lancaster.	
	C48	NICOLIS, G., "Nonlinear Phenomena in Chemistry", Introduction to Nonlinear Science, 1995, Cambridge University Press, Great Britain.	
	C49	Omnichord OM-250m, Suzuki, Box 261037, San Diego, CA 92196, USA.	
	C50	ORBAN, M., KURIN-CSORGEI, K., ZHABOTINSKY, A. and GELSTEIN, I., "New Indicators for Visualizing Pattern Formation in Uncatalyzed Bromate Oscillatory Systems", J. Am. Chem. Soc. 1998, Vol. 120, pp. 1146-1150.	
	C51	PC-1600 Midi Controller, Peavey Corporation, 711 A St., Meriden, MS 38302-2898, USA.	
	C52	PENNYWITT, KIRK "Robotic Tactile Sensing," Byte, Jan., 1986.	
	C53	PLM 8128E, Peavey, Corporation, 711 A St., Meriden, MS 38302-2898, USA.	
	C54	PMC10 Program, MIDI Foot Controller, Bluetech, Salt Lake City, UT, USA.	
	C55	Review of KORG X-230 Drum (later called "Wave Drum"), Electronic Musician, Apr. 1994.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	
		Filing Date	November 6, 2003
		First Named Inventor	Lester F. Ludwig
		Group Art Unit	
		Examiner Name	
Sheet 10 of 13	Attorney Docket Number	2738-30	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Y ²
<i>YLF</i>	C86	RICH, ROBERT "Buchla Lightning MIDI Controller", Electronic Musician, Oct. 1991.	
<i>YLF</i>	C87	RICH, ROBERT "Buchla Thunder", Electronic Musician, Aug. 1990.	
<i>YLF</i>	C88	ROADS, C., "A Tutorial on Non-linear Distortion or Waveshaping Synthesis," Computer Music Journal, Vol. 3, No. 2, pp. 29-34, June 1979, People's Computer Company, Menlo Park, CA, USA.	
<i>YLF</i>	C89	Yamaha WX11 and WT11, Midi Magazine Mar./Apr. 1994, Yamaha Corp. of America, 6600 Orangefurpe Ave., PO Box 8606 Buena Park, CA 90622-6600, 714 522-5011.	
	C90	Roland's COSM: A WHO'S NEW WAYS OF SOUND, Kikunori Meyer, Roland Users' Magazine, 7200 Dominion Circle, Los Angeles, CA, 90040-3698, USA.	
<i>YLF</i>	C91	RONSE, CHRISTIAN and DEVLIVER, PIERRE A., Connected Components in Binary Images, the Detection Problem, 1984, Research Studies Press/ John Wiley & Sons Inc., New York, NY, USA.	
	C92	RSP-550 Algorithm Guide, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3698, USA.	
	C93	RSP-550 Owners Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3698, USA.	
<i>YLF</i>	C94	RUOFF, P. "How Bromate Oscillators Are Controlled", Am. Chem. Society, 1983.	
	C95	Sentient Six digital guitar interface, PASCAC, Milpitas, CA 95035, USA.	
	C96	SGE MACH II, Applied Research and Technology, 215 Tremont St., Rochester, NY 14608, USA.	

Examiner Signature	<i>W. F. Ludwig</i>	Date Considered	7/23/07
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		Filing Date	November 6, 2003
		First Named Inventor	Leslie F. Ludwig
		Group Art Unit	
		Examiner Name	
		Attorney Docket Number	2738-30
Sheet	11	of	13

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<i>[Signature]</i>	C67	SHAPIRO, LARRY S. Affine Analysis of Image Sequences, 1995, Press Syndicate of the Cambridge University Press.	
<i>[Signature]</i>	C68	SLAWSON, WAYNE. Sound Color, 1985, University of California Press, Berkeley, CA, USA.	
<i>[Signature]</i>	C69	SNELL, JOHN M. "Sensors for Playing Computer Music with Expression", Proceedings of the Intl. Computer Music Conf. at Eastman, 1993.	
	C70	Switchblade 15, Squared-Scripture, 5741 Arapahoe Rd. Ste. 2a Boulder, CO 80303, USA.	
	C71	Synthophone, Softwind Instruments, 304 Newbury St. Ste. 323, Boston, MA 02155, USA.	
<i>[Signature]</i>	C72	Tactile sensors and the gripping challenge, IEEE Spectrum Aug. 1988.	
	C73	The Fretless Wizard, Blaxe, P.O. Box 15426, Stamford, CT 06901-0426, USA.	
	C74	Trilogy, Hipshot Music Prods. Van Nuys, NY, USA.	
	C75	TYSON, JOHN J., The Common-Base Amplifier Revisited, Springer-Verlag, Berlin/Heidelberg, Germany.	
	C76	Unlocking the Secrets of FRM (Harmonic Resonance Modeling), Craig Anderton, Roland Users' Magazine, 7200 Dominion Circle, Los Angeles, CA 90040-0000, USA.	
	C77	Various 8D Tracking Products, Ascension Technology Corporation, P.O. Box 527, Burlington, VT 05402, USA.	

Examiner Signature	<i>[Signature]</i>	Date Considered	7/23/07
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Sheet 12 of 13

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Application Number
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<i>YLF</i>	C78	VERNER, J. Arif Starr Switch Company Ztar 824-D, Electronic Musician, Nov. 1994.	
	C79	VOX Users Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3899, USA.	
<i>MS</i>	C80	VIBERG, MATS, Subspace Fitting Concepts in Sensor Array Processing, Linköping Studies in Science and Technology, 1989, Dissertations No. 27 Linköping, Sweden.	
<i>MS</i>	C81	VIGINTIN, A. (ed.), Models of Hysteresis, Longman Scientific & Technical, 1993, Harlow, England.	
<i>MS</i>	C82	WANG, K-J, and NICOLIS, G. "Bifurcation Phenomena in Coupled Chemical Oscillators: Normal Form Analysis and Numerical Simulations", Physica 26D (1987), pp. 140-155, North-Holland, Amsterdam.	
<i>OK MS</i>	C83	WESSEL, C., "A Tutorial on Non-linear Oscillation or Waveshaping Synthesis", Computer Music Journal, Jun. 1979, Vol. 3, No. 2, pp. 29-34, People's Computer Company, Menlo Park, CA., USA.	
<i>MS</i>	C84	WILKINSON, SCOTT "SynchroVoice MidiVox" Electronic Musician, Jul. 1992.	
<i>MS</i>	C85	WINCKEL and FRITZ, Music Sound, and Sensation: A Modern Exposition, 1987, Dover, New York, USA.	
	C86	Wind Machine, Aristek, Creation Technologies, 400 Brookbank Ave., B.C. Canada V7J-1G9	
	C87	ZTAR Midi Fingerboard Controllers ZTAR Instruments, Ztar Synch, 1717 Fifth Ave., San Diego, CA 92101, USA.	
	C88	X5DR A12 Synthesizer Module, KORG, Suningawad, Tokyo, Japan.	

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